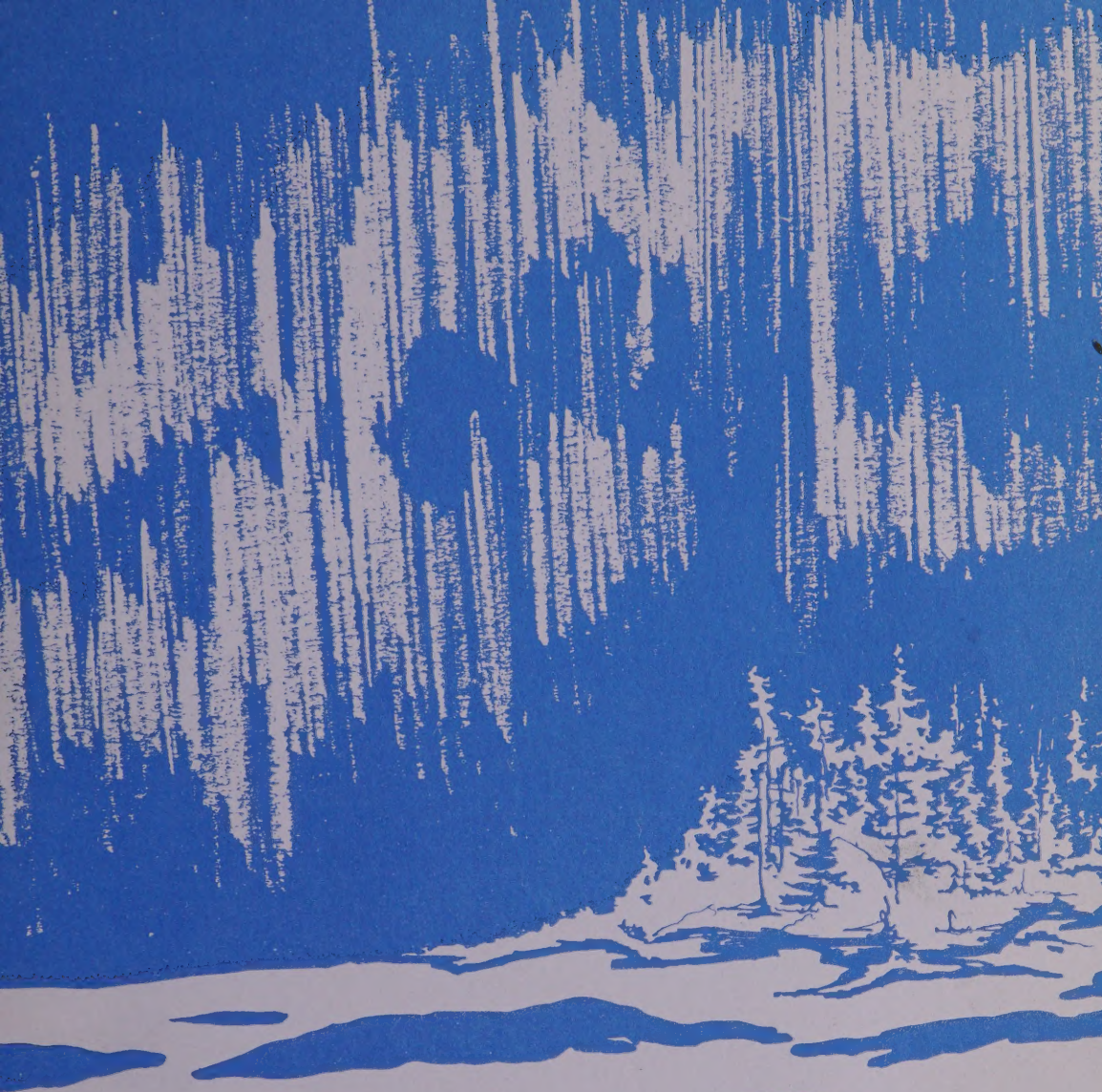

ARCTIC SUMMER SCHOOL

JULY 11 to JULY 30, 1971 INUVIK, N.W.T.

Arranged and organized by the

INSTITUTE and the DEPARTMENT OF EXTENSION
The University of Alberta
with the co-operation of the
Government of the Northwest Territories

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ARCTIC SUMMER SCHOOL

The purpose of this course is to provide senior and middle management people from private industry and government organizations with an opportunity to become familiar with developments and problems in northern Canada. The course will also be of interest to many other professional people whose work is related to various types of northern projects. The need for this type of course has been created by the increased emphasis on northern development coupled with public concern for the environment. It seems apparent that all those people who are providing inputs into decision-making processes effecting the North should have an understanding of the conditions there and the problems that changes may create.

The curriculum has, therefore, been designed to give participants an opportunity to develop a broad understanding of the environment in the western Arctic. It will take an interdisciplinary approach and try to familiarize students with a wide range of material. It is expected that this type of background will enable students to improve their ability to make decisions and recommendations in their own fields of interest on policies being established or projects being undertaken in the North. In this sense it is a course unique to the Canadian scene.

The program at Inuvik will consist of lectures, discussion periods and field trips. Topics will include geology, geography, ecology, sociology and anthropology, and engineering. The majority of the instruction will be handled by a small group of instructors who will be present for the whole period. In addition other knowledgeable people including scientists working and living in the Mackenzie Delta and other nearby areas will be brought into Inuvik to conduct seminars designed to enrich the program.

It is intended that the students and staff work together in a colleague relationship in examining the interrelatedness of environmental factors and their relevance in decision making and in economic development. During small group discussions students and staff at the summer school will have plenty of opportunity to interact among themselves and with local inhabitants to develop their concepts concerning the nature of the North as a region as well as to improve their understanding of the problems involved.

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PROGRAM

The course will begin Sunday, July 11th, and end Friday, July 30th, 1971. Activities will be scheduled each day except for two Sundays, July 18th and July 25th. Each day's program will consist of lectures, discussion periods and free time for study and recreation. Several full days will be devoted to field trips in the Delta area and, if possible, along the coastal plains to the east and west.

The following is an outline of the subject matter to be covered:

1. Engineering Problems

A basic review of some of the physical characteristics unique to the northern environment, and their effect on engineering projects.

Instructors: R. A. Hemstock, Arctic Co-ordinator, Imperial Oil Limited
S. J. Bird, Department of Civil Engineering, University of Toronto

— permafrost
— site investigation
— aerial photography
— thermal regimes
— strength of frozen ground
— building design
— road and airstrip design
— municipal engineering
— drilling

Field trip to ice formations and construction sites in area.

2. Geology and Geography

Designed to give the student an understanding of the physical features of the land and water surfaces in the western Arctic.

Instructors: C. J. Yorath, Geological Survey of Canada, and other members of the Survey

— geology of the northern plains, the Mackenzie Delta and mountains
— geology of offshore area under the Beaufort Sea
— Quaternary geology of the Mackenzie Delta, Arctic Plains and Mackenzie Valley
— Arctic Island geology

— geology and permafrost

Field trip to the interior plains, the Anderson and Horton Rivers and the Arctic Islands.

3. **Ecology**

A study of the life balance in the boreal forest and tundra areas of the region designed to give course participants a base on which they can judge the effect of developments on the environment.

Instructors: W. A. Fuller, Chairman, Department of Zoology, The University of Alberta
D. G. Gill, Assistant Professor, Department of Geography, The University of Alberta

— the regional concept of the North
— relation of macro and micro climates to ecology
— heat budgets
— periglacial geomorphology
— ecology of the boreal forest
— organic terrain
— tree line
— ecological modifications by man
— tundra ecology

Field trip in the Mackenzie Delta to study flow regimes, erosion, delta geomorphology, micro-climate differences, plant succession, ecology of mammals and birds.

4. **Sociology and Anthropology**

A review of the nature of culture and the process of cultural change, particularly as it applies to the people living in the Canadian North. Emphasis will be placed on the interactions between culture, ecology and economic development.

Instructors: K. J. Crowe, Northern Science Research Group, Department of Indian Affairs and Northern Development
P. T. Spaulding, Associate Professor Dept. of Sociology and Anthropology, The University of Calgary

— patterns of culture and problems of culture contact
— characteristics of urban Canadian culture and their transmission as cultural values to indigenous peoples

— cultural context of industrial development
— ethics of planned cultural change
— an appreciation of the traditional cultures of northern Canada in historic perspective
— urbanization and ecology in the Northwest Territories
— growth rate and migration patterns of various Northern ethnic groups
— the development of institutions of local government: an ethnic redistribution of political power
— a regional view of human resource development in the Mackenzie Delta

ARRANGEMENTS AND COSTS

Participants will leave Edmonton on Saturday, July 10th, by PWA's regularly scheduled jet flight to Inuvik. Arrangements have been made for a group booking which will reduce the return fare from $300 to $238. Accommodation in Inuvik will be provided in the Department of Education's residential centre, Grollier Hall. The rooms in this building normally accommodate four people in each, but with the maximum enrollment of 60 in the Summer Course, only two, and in some cases three, people will be assigned to each room. Classes will be held in the Samuel Hearne High School.

The course fee, inclusive of instruction, materials, lodging and meals, is $820.00. People interested in registering should complete the attached form. Fees should either accompany your registration form or it should be indicated that the Department invoice your organization. Invoices must be paid in full by May 15, 1971, which is also the last day for obtaining refunds if prepaid.

Further information can be obtained by contacting Charles Lockwood at the Department of Extension, The University of Alberta, Edmonton, 439-2021.

ADVISORY COMMITTEE

L. C. Bliss, Professor of Botany, The University of Alberta

J. Jameson Bond, Director, Boreal Institute for Northern Studies and Associate Professor of Anthropology, The University of Alberta

W. A. Fuller, Chairman, Department of Zoology, The University of Alberta

D. A. Gill, Assistant Professor of Geography, The University of Alberta

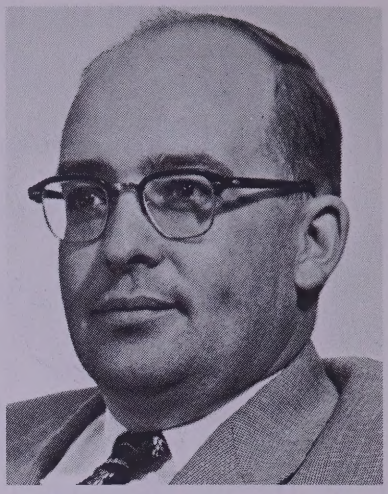
B. C. Gillie, Director of Education, Government of the Northwest Territories

R. M. Hardy, Dean of Engineering, The University of Alberta

R. A. Hemstock, Regional Arctic Co-ordinator, Imperial Oil Limited

G. S. H. Lock, Associate Professor of Mechanical Engineering, The University of Alberta

C. M. Lockwood, Acting Director, Department of Extension, The University of Alberta



RUSSELL A. HEMSTOCK is regional arctic co-ordinator for Imperial Oil Limited. He received his B.Sc. and M.Sc. from the University of Alberta. Upon completion of his university course he undertook as a research project the study of permafrost at Norman Wells, N.W.T. Mr. Hemstock has spent some 24 years with Imperial Oil serving in various positions and localities. One of his major projects in his research work had to do with the study of muskeg terrain and the evaluation of engineering problems associated with development of the Canadian Arctic.

Mr. Hemstock is an active member with several associations including the Association of Professional Engineers of Alberta, the Canadian Institute of Mining and Metallurgy and the Muskeg Subcommittee and the Geotechnical Committee of the National Research Council of Canada. He was also instrumental in the formation of the Arctic Petroleum Operators Association and is chairman of that organization.

He has published some 34 papers, many of them dealing with problems of the Canadian North.

S. J. GLENN BIRD is an Assistant Professor with the Department of Civil Engineering of the University of Toronto. He received his B.A.Sc. and M.A.Sc. from the University of Toronto and was a graduate student in civil engineering at Purdue University, majoring in airphoto interpretation. Mr. Bird was a co-winner of the 1970 Civil Club Graduating Class Award for "the professor in their years at the University of Toronto, who has had the most positive effect on their engineering education."

Mr. Bird was commissioned as O.L.S. in 1957. He is an

active member of several technical associations including the Association of Professional Engineers, American Society of Photogrammetry and the Canadian Institute of Surveying. He is a member of the Special Policy Committee of Integration of Northern Research, National Northern Research Group. He has had numerous papers published on airphoto interpretation and other related subjects and has been granted and supervised a number of research grants regarding Arctic and Sub-Arctic regions.

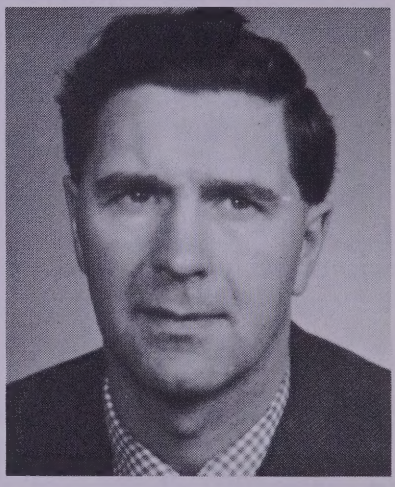
W. A. FULLER is chairman of the Department of Zoology at the University of Alberta. He received his B.A. and M.A. in Biology from the University of Saskatchewan and Ph.D. from the University of Wisconsin. He spent two summers doing fishery surveys of Lake Athabasca and Great Slave Lake. While a member of the Canadian Wildlife Service he was resident biologist for Wood Buffalo National Park and Southern Mackenzie District and studied muskrats and bison in the Park, beaver, wolves and assorted other things in the Mackenzie.

Dr. Fuller's current research interest is in population and winter ecology of small mammals at Heart Lake Laboratory overlooking the head of Mackenzie River.

DON GILL is an Assistant Professor with the Department of Geography at the University of Alberta. He received his B.Sc. from the Northern Michigan University (Marquette), M.A. from the University of California (Los Angeles), and Ph.D. from the University of British Columbia. His current teaching experience is in the subjects of eco-systematic analysis of Northern environmental systems and the exploration, settlement and development of Arctic and Sub-Arctic regions, with emphasis on Northern Canada and Alaska, and biogeographic regions —their development, distributional characteristics and use by man. His personal research projects are in the areas of snow damage to boreal forest stands, massive slump-

ing initiated by thermo-erosional niche formation in the Mackenzie River Delta, man-induced micro-floristic and micro-environmental changes in the Mackenzie Delta region and unusual winter feeding by porcupines in low-elevation krummholz in Southwest Alberta. Dr. Gill's future research plans are on continuing field analysis of biophysical environmental systems, emphasizing winter ecology of high-energy environments.

Dr. Gill is a member of the Arctic Institute of North America, the Indian-Eskimo Association of Canada, the Scott Polar Research Institute and is a member of the Advisory Board of the Boreal Institute for Northern Studies. He has published several papers.



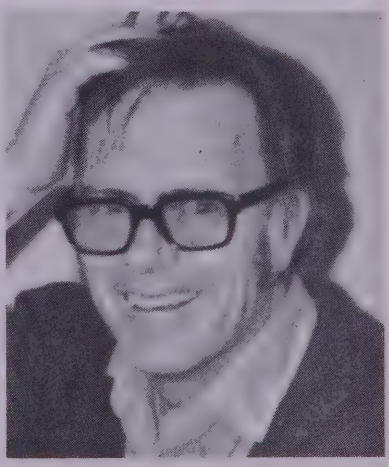
KEITH J. CROWE is a research officer with the Northern Science Research Group, Department of Indian Affairs and Northern Development, Ottawa. He received his B.A. and M.A. in Cultural and Economic Geography from the University of British Columbia. His work experience includes surveying for coal mining, road and rail location, bridge and building construction in Britain, British Columbia and Alberta. His work with Indian and Eskimo Affairs has included administration, welfare, and economic projects at Ungava Bay, and Pangnirtung, Baffin Island, and summer studies which involved an economic survey in Foxe Basin Region, N.W.T. His most recent positions have included Social Development Specialist, Regional Superintendent of Adult Education, and Superintendent of Eskimo Artists, Expo '70, Japan.

Mr. Crowe has published several papers, numerous articles, book reviews, story and poem concerning various aspects of northern development.

C. J. YORATH is a member of the Geological Survey of Canada, Institute of Sedimentary and Petroleum Geology, Calgary. He received his B.Sc. in Geology from the University of British Columbia, M.Sc. from the University of Alberta and Ph.D. from Queen's University.

Dr. Yorath's experience has included petroleum exploration in the Arctic Islands, subsurface petroleum exploration in Alberta, marine geological research in the eastern Canadian continental shelf and geophysical exploration in the Middle East. His work with GSC has been in the Canadian Arctic mainland, island and offshore, and his principal research interest is the geological history of the Mackenzie Delta and Beaufort Sea Basin. His research work has resulted in four publications.

Dr. Yorath is a member of the Alberta Society of Petroleum Geologists and the Association of Professional Engineers of Alberta.



PHIL T. SPAULDING is an associate professor with the Department of Sociology and Anthropology of The University of Calgary. He received his B.A. from the University of Alaska, M.A. from the University of Oregon, and Ph.D. from the University of Washington. His teaching experience has been with the Western Washington State College in Bellingham, Washington, and the University of Calgary.

Dr. Spaulding's research activities include anthropological research conducted among Eskimos of Northwestern Alaska, the Aleuts of the Aleutian Islands, the Cree of Northern Saskatchewan. A study on the Cree has been published.

APPLICATION FORM

To: The Director
Department of Extension
The University of Alberta
Edmonton, Alberta

Please register me in the Arctic Summer School to be held in Inuvik, N.W.T., from July 11 to July 30, 1971.

NAME: .....

TITLE: .....

ORGANIZATION: .....

ADDRESS: .....

.....

BUS. TELEPHONE ..... RES. TELEPHONE .....

☐ My fee of $820.00 is enclosed.

☐ Please invoice my organization for the course fee of $820.00.

I would like to fly with the group from Edmonton on July 10 and return July 31.

☐ An additional $238.00 is included with my enclosed cheque.

☐ Please add $238.00 onto the invoice you send my organization.

Signed .....

Date Due

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